

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA2004/001904

## A. CLASSIFICATION OF SUBJECT MATTER

According to International Patent Classification (IPC) or to both national classification and IPC F16L-25/00

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>7</sup> F16L, F16L-25/00, F16L-27/02, F25D-17/00, F25B-41/00, F25B-45/00, F24F-13/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

US Classes 62/77, 62/292, 285/147.1, 285/148.1, 285/148.4, 285/175, 285/181, 285/272, 285/383

Electronic database(s) consulted during the international search (name of database(s) and, where practicable, search terms used)

Delphion, USPTO, Canadian Patent Database

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages |            |                   |                 | Relevant to claim No(s) |
|-----------|------------------------------------------------------------------------------------|------------|-------------------|-----------------|-------------------------|
| X         | US5333467                                                                          | 02-08-1994 | US Cl. 62/77      | Pearl II et al. | 1-45                    |
| X         | US5975490                                                                          | 02-11-1999 | US Cl. 285/149.4  | Essman          | 1-45                    |
| Y         | US6604543                                                                          | 12-08-2003 | US Cl. 137/355.27 | Guo             | 17                      |
| Y         | US4437690                                                                          | 20-03-1984 | US Cl. 285/272    | Drath           | 5, 15, 16, 41-43, 45    |

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents :  
 "A" document defining the general state of the art which is not considered to be of particular relevance  
 "E" earlier application or patent but published on or after the international filing date  
 "L" document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  
 "O" document referring to an oral disclosure, use, exhibition or other means  
 "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  
 "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone  
 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art  
 "&" document member of the same patent family

Date of the actual completion of the international search

18 February 2005 (18-02-2005)

Date of mailing of the international search report

07 March 2005 (07-03-2005)

Name and mailing address of the ISA/CA  
 Canadian Intellectual Property Office  
 Place du Portage I, C114 - 1st Floor, Box PCT  
 50 Victoria Street  
 Gatineau, Quebec K1A 0C9

Facsimile No: 001(819)953-2476

Authorized officer  
 William Byrne (819) 997-2565

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## Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of the first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons :

1. ☐ Claim Nos. :

because they relate to subject matter not required to be searched by this Authority, namely :

2. ☐ Claim Nos. :

because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically :

3. ☐ Claim Nos. :

because they are dependant claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows :

The claims are directed to a plurality of alleged inventions as follows:

- Group A - Claims 1-30, 36-45 are directed to arrangements for permitting relative rotation of a hose and an apparatus for use with a refrigeration or air-conditioning system; and
- Group B - Claims 31-35 are directed to a charging manifold for use in association with and air-conditioning or refrigeration system, characterized in that swivels permit relative rotation of the manifold and gauges attached thereto.

The sole element common to all claims is the use of a swivel in a fluid system, specifically in a system pertaining to air-conditioning and refrigeration systems. However, as evidenced by the cited documents, the use of swivels in such systems is well known. Therefore, any invention must lie elsewhere in the claims. However, looking past the sole common claim

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claim Nos. :
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claim Nos. :

Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.  
PCT/CA2004/001904

| Patent Document<br>Cited in Search Report | Publication<br>Date | Patent Family<br>Member(s)                   | Publication<br>Date                    |
|-------------------------------------------|---------------------|----------------------------------------------|----------------------------------------|
| US5333467                                 | 02-08-1994          | US5333467 A                                  | 02-08-1994                             |
| US5975490                                 | 02-11-1999          | US5975490 A                                  | 02-11-1999                             |
| US6604543                                 | 12-08-2003          | CA2380553 A1<br>CN2528754Y Y<br>US6604543 B1 | 21-06-2003<br>01-01-2003<br>12-08-2003 |
| US4437690                                 | 20-03-1984          | US4437690 A                                  | 20-03-1984                             |